

BS ISO 5775-2:2015



BSI Standards Publication

Bicycle tyres and rims

Part 2: Rims

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National foreword

This British Standard is the UK implementation of ISO 5775-2:2015. It supersedes BS 6102-6:1997 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee GME/25, Cycles.

A list of organizations represented on this committee can be obtained on request to its secretary.

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ISBN 978 0 580 71479 5

ICS 43.150

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 December 2015.

Amendments issued since publication

Date	Text affected
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INTERNATIONAL
STANDARD

BS ISO 5775-2:2015

ISO
5775-2

Third edition
2015-12-01

Bicycle tyres and rims —

Part 2:
Rims

Pneumatiques et jantes pour cycles —
Partie 2: Jantes



Reference number
ISO 5775-2:2015(E)

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Contents

Page

Foreword	iv
1 Scope	1
2 Symbols and abbreviated terms	1
3 General requirements	1
3.1 Rim contour.....	1
3.2 Rim valve hole.....	2
3.3 Specific requirements.....	2
4 Straight side rims	2
4.1 Rim contour.....	2
4.2 Rim diameter.....	2
4.3 Designation and marking.....	2
5 Hooked bead rims	6
5.1 Rim contours.....	6
5.2 Rim diameters and circumferences.....	6
5.3 Designation and marking.....	6
6 Crotchet type rims	7
6.1 Rim contours.....	7
6.2 Rim diameters.....	7
6.3 Designation and marking.....	7
Annex A (informative) Methods for measuring and gauging bicycle rim dimensions	10

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 31, *Tyres, rims and valves*, Subcommittee SC 10, *Cycle, moped, motorcycle tyres and rims*.

This third edition cancels and replaces the second edition (ISO 5775-2:1996), which has been technically revised.

It also incorporates the Amendment, ISO 5775-2:1996/Amd 1:2001.

ISO 5775 consists of the following parts, under the general title *Bicycle tyres and rims*:

- *Part 1: Tyre designations and dimensions*
- *Part 2: Rims*

[Annex A](#) of this part of ISO 5775 is for information only.

Bicycle tyres and rims —

Part 2: Rims

1 Scope

This part of ISO 5775 specifies rim dimensions for bicycle tyres: it gives only those rim contour dimensions necessary for tyre mounting and to fit the tyre on the rim.

ISO 5775-1 covers designations and dimensions for tyres.

ISO 5775-2 covers straight side (SS) rims, hooked bead type (HB) rims and crotchet type (C) rims.

2 Symbols and abbreviated terms

The following symbols are used in this part of ISO 5775:

<i>A</i>	Rim width
<i>D</i>	Specified rim diameter
<i>D</i> ₁	Measured rim diameter
<i>D</i> ₂	External diameter
<i>D</i> _m	Measuring mandrel diameter
<i>G</i>	Flange height
<i>H, H</i> ₁	Unobstructed minimum depth above rim base with rim tape fitted to permit tyre fitment
<i>L</i>	Theoretical tape length
<i>L</i> ₁	Well width above rim tape
<i>P</i>	Bead seat width
<i>R</i> ₁ , <i>R</i> ₂	Flange radius
<i>R</i> ₄	Well top radius
<i>W</i>	Measuring tape width

3 General requirements

3.1 Rim contour

The rim shall have a smooth contour, free of sharp edges, on the side of the tyre.

3.2 Rim valve hole

The rim valve hole shall be centred on the bottom of the rim well. On the tyre side, the edges have to be rounded or chamfered. On the hub side, the edges shall be free from burrs which could damage the valve.

3.3 Specific requirements

Designation and dimensions for straight side rims, hooked bead type rims and crotchet type rims are given in [Clauses 4, 5](#) and [6](#) respectively.

Width and thickness of rim base protection shall be chosen in such a way as to guarantee the complete covering of the spoke heads and spoke holes during use, as well as a stable lateral fit, and to permit satisfactory fitting of the tyre and the tube.

4 Straight side rims

4.1 Rim contour

Dimensions and tolerances of straight side (SS) rims shall be given in [Figure 1](#) and [Table 1](#)

Straight side rims are to be used only with non-foldable tyres (rigid bead tyres).

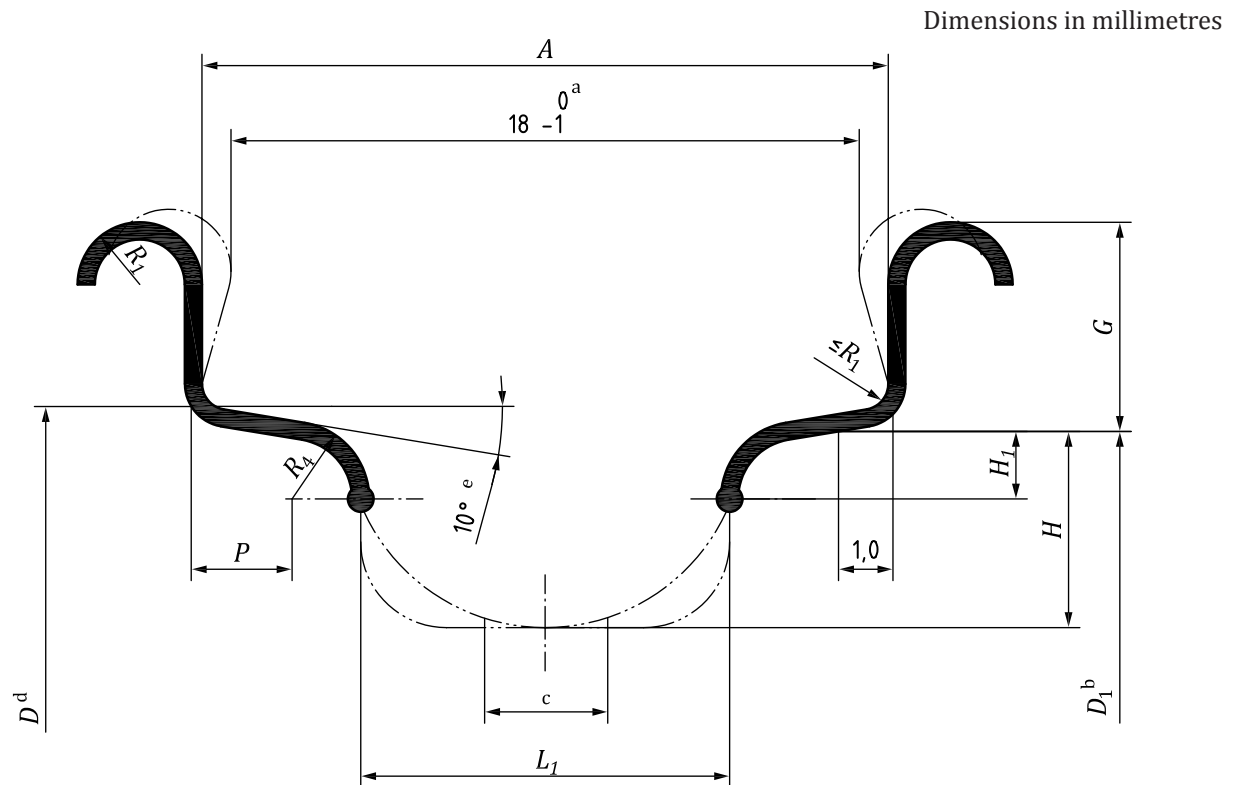
4.2 Rim diameter

The nominal rim diameter code, specified rim diameters and measuring rim diameters for straight side (SS) rims has to be given in [Figure 1](#) and [Table 2](#).

4.3 Designation and marking

A straight side (SS) rim shall be designated by its nominal rim diameter code and its nominal width code, optionally preceded by "SS" for straight side.

EXAMPLE SS 400 × 20



Key

- ^a 18₋₁⁰ (Rim 18 only).
- ^b Measuring rim diameter.
- ^c Valve holes 6,2^{+0,3/+0}; 8,3^{+0,3/+0}.
- ^d Specified rim diameter.
- ^e Allowed 5° to 15° (5° to 25° in case of rolled rims with nominal rim diameter 400 and smaller).

Figure 1 — Straight side rims

Table 1 — Dimensions of straight side rims

Dimensions in millimetres

Width code	A ±1	G ±0,5	H ₁ ^{a,b}		L ₁ ^b min	P min	R ₁ min	R ₄ min
			min	max				
16	16	5,5	1,8	6	9	1,5	1	1,5
18 ^c	18	6,5	1,8	6	10	1,8	1,5	1,5
20	20	6,5	2	6,5	11	2	1,8	1,5
22	22	6,5	3	7,5	11	2,2	1,8	2
24	24	7	3	7,5	11	3	2	2,5
27	27	7,5	3,5	8	14	3,5	2,5	2,5
30,5	30,5	8	3,5	8	14	3,5	2,5	2,5

^a It is recommended that the contour of rims having a specified diameter below 400 mm should have well depth H_1 1 mm deeper.

^b The dimension H_1 , in conjunction with dimension L_1 , defines a minimum unobstructed space above the rim base and the nipple heads with the rim base protective flap fitted to permit satisfactory tyre fitment. The dimension H_1 , is to be varied as the discretion of rim manufacturers to achieve the above objective.

^c Previously known as rim with code 17.

Table 2 — Specified and measuring ring rim diameters for straight side rims and crotchet type rims

Dimensions in millimetres

Nominal diameter code	Specified rim diameter D	Measuring rim diameter $D_1 \pm 0,5^a$
194	194,2	193,85
203	203,2	202,85
222	222,2	221,85
239	239,4	239,05
248	247,6	247,25
251	250,8	250,45
279	279,2	278,85
288	287,8	287,45
298	298,4	298,05
305	304,7	304,35
317	317,0	316,65
330	329,8	329,45
337	336,6	336,25
340	339,6	339,25
349	349,2	348,85
355	355,0	354,65
357	357,1	356,75
369	368,6	368,25
381	380,9	380,55
387	386,6	386,25

^a The tolerance on the measured bead seat circumference ($p \times$ measuring rim diameter) is $\pm 1,5$ mm.

Table 2 (continued)

Nominal diameter code	Specified rim diameter D	Measuring rim diameter $D_1 \pm 0,5^a$
390	389,6	389,25
400	400,1	399,75
406	405,6	405,25
419	418,6	418,25
428	428,1	427,75
432	431,6	431,25
438	437,9	437,55
440	439,9	439,55
451	450,8	450,45
457	457,0	456,65
484	484,0	483,65
489	488,6	488,25
490	490,2	489,85
498	497,5	497,15
501	501,3	500,95
507	507,3	506,95
520	520,2	519,85
531	530,6	530,25
534	533,5	533,15
540	539,6	539,25
541	540,8	540,45
547	546,5	546,15
559	558,8	558,45
565	564,9	564,55
571	571,0	570,65
584	583,9	583,55
590	590,2	589,85
597	597,2	596,85
609	609,2	608,85
622	622,3	621,95
630	629,7	629,35
635	634,7	634,35
642	641,7	641,35

a The tolerance on the measured bead seat circumference ($p \times$ measuring rim diameter) is $\pm 1,5$ mm.

The mandrel diameter ($D_m \begin{smallmatrix} +0 \\ -0,05 \end{smallmatrix}$) related to the First Method is equal to the measuring rim diameter D_1 . The theoretical tape length, including the maximum tolerance on the bead set circumference, can be computed from $L = \pi (D_1 + 0,3) + 2,0$ and is related to the flat tape at 20 °C (See [A.4](#)).

5 Hooked bead rims

5.1 Rim contours

Dimensions and tolerances of hooked bead (HB) rims shall be as given in [Figure 2](#) and [Table 3](#).

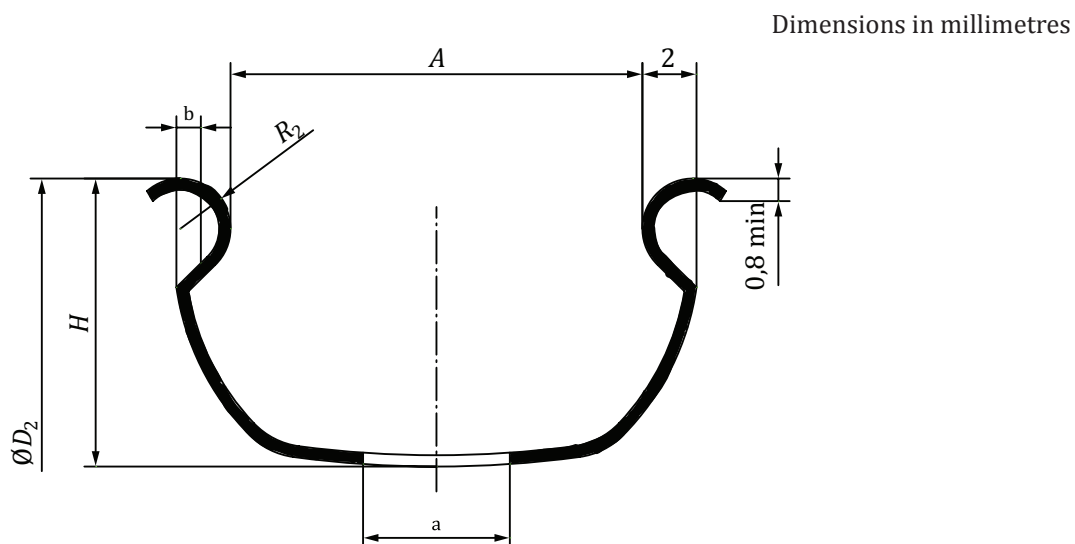
5.2 Rim diameters and circumferences

The nominal rim diameter code, specified rim diameters and measuring circumferences for hooked bead (HB) rims shall be as given in [Figure 2](#) and [Table 4](#).

5.3 Designation and marking

A hooked bead (HB) rim shall be designated by its nominal rim diameter code and its nominal width code, preceded by "HB" for hooked bead.

EXAMPLE HB 422 × 25



Key

- a Valve hole.
- b Optional opening not to exceed 1 mm.

Figure 2 — Hooked bead rims

Table 3 — Dimensions of hooked bead rims

Dimensions in millimetres

Nominal rim width	A ± 1	H min	R_2 $\pm 0,5$	R_7 min
20	20	13	2	30
25	25	14	2	50
27	27	15	2	70

Table 4 — Specified rim diameters and circumferences for hooked bead rims

Dimensions in millimetres

Nominal rim diameter code	Specified rim diameter <i>D</i>	Specified rim circumference, πD $\pm 2,5$
HB270	269,9	847,9
HB321	320,7	1 007,5
HB372	371,5	1 167,1
HB422	422,3	1 326,7
HB459	458,8	1 441,4
HB473	473,1	1 486,3
HB510	509,6	1 601
HB524	523,9	1 645,9
HB560	560,4	1 760,6
HB575	574,7	1 805,5
HB611	611,2	1 920,1

HB denotes hooked bead rim; the number following HB is the rim code.

6 Crotchet type rims

6.1 Rim contours

Dimensions and tolerances of crotchet type (C) rims shall be as given in [Figure 3](#) and [Table 5](#).

Crotchet type rims shall be used with rigid and foldable bead tyres.

6.2 Rim diameters

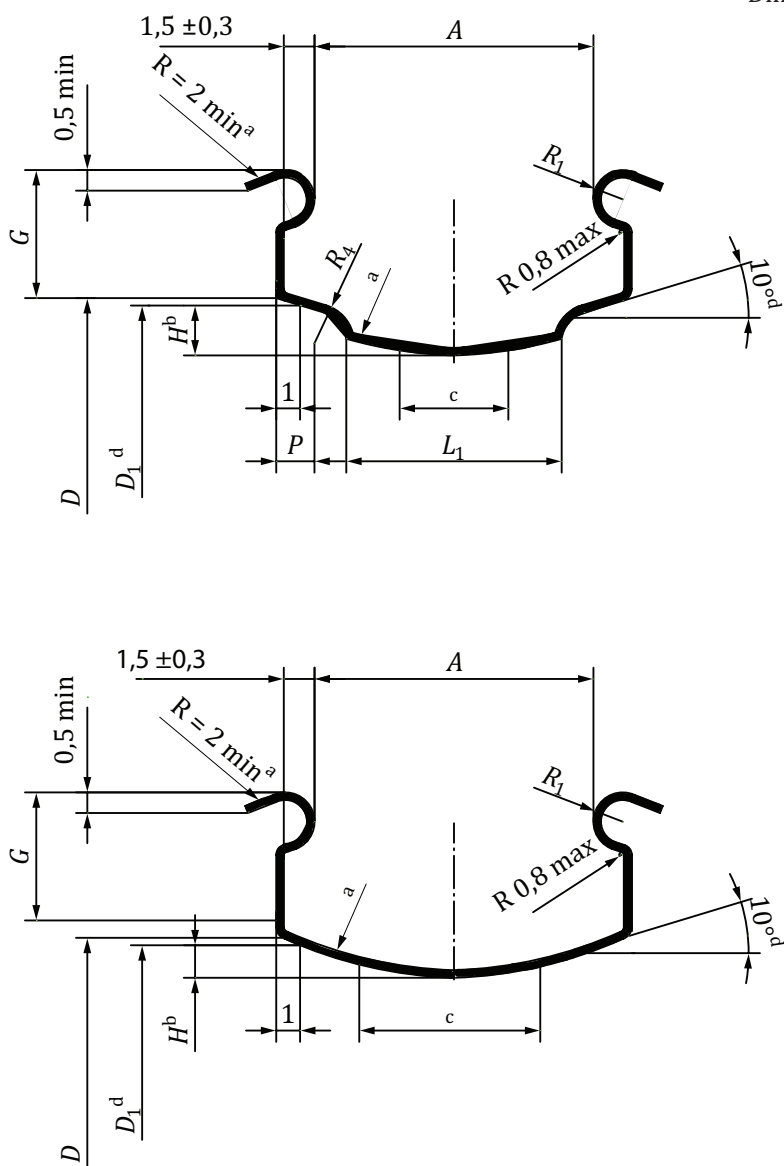
The nominal rim diameter code, specified rim diameters and measuring rim diameters for crotchet type (C) rims shall be given in [Figure 3](#) and [Table 2](#).

6.3 Designation and marking

A crotchet type (C) shall be designated by its nominal rim diameter code and its nominal width code, followed by "C" for crotchet type.

EXAMPLE 622 × 13C

Dimensions in millimetres



Key

- a The internal surface of the bottom well and the flange edge is to guarantee a smooth non aggressive surface in order not to damage the tyre.
- b Dimension H defines a minimum unobstructed space above the rim base and the nipple heads, with the rim tape fitted to permit satisfactory tyre fitment. Rim manufacturers shall recommend a maximum thickness for the rim tape to be used, taking into account D_1 and its tolerances. In the absence of any specification from rim manufacturers, the maximum thickness of the rim tape shall not exceed 0,8 mm in the area of the bead seat.
- c Valve holes $6,2^{+0,3}/_{+0}$. For rim codes 17C and above, valve holes $8,3^{+0,3}/_{+0}$ are permitted.
- d For reference purposes only, dimension D_1 on [Table 2](#) is to be respected.

Figure 3 — Crotchet side rims

Table 5 — Dimensions of crotchet type rims

Dimensions in millimetres

Rim con- tour	<i>A</i> ±0,5	<i>G</i> ±0,5	<i>H</i>		<i>L</i> ₁ min	<i>P</i> min	<i>R</i> ₁		<i>R</i> ₄ min
			min	max					
13C	13	5,5	2,2	5,5	—	2,5	0,9	±0,1	—
15C	15	5,5	2,2	5,5	9	2,5	0,9	±0,1	1,5
17C	17	6	2,2	6	10	2,5	1,1	±0,25	1,5
19C	19	6	2,2	6	11	3	1,1	±0,25	1,5
21C	21	6	2,2	6	11	3	1,1	±0,25	2
23C	23	6,5	3,5	6,5	11	3	1,1	±0,25	2,5
25C	25	6,5	3,5	6,5	14	3	1,1	±0,25	2,5
27C	27	6,5	3,5	6,5	14	3	1,1	±0,25	2,5
29C	29	6,5	3,5	6,5	14	3	1,1	±0,25	2,5

Annex A (informative)

Methods for measuring and gauging bicycle rim dimensions

A.1 Purpose

[Annex A](#) gives methods for measuring and gauging dimensions of straight side rims, hooked bead type rims and crotchet type rims.

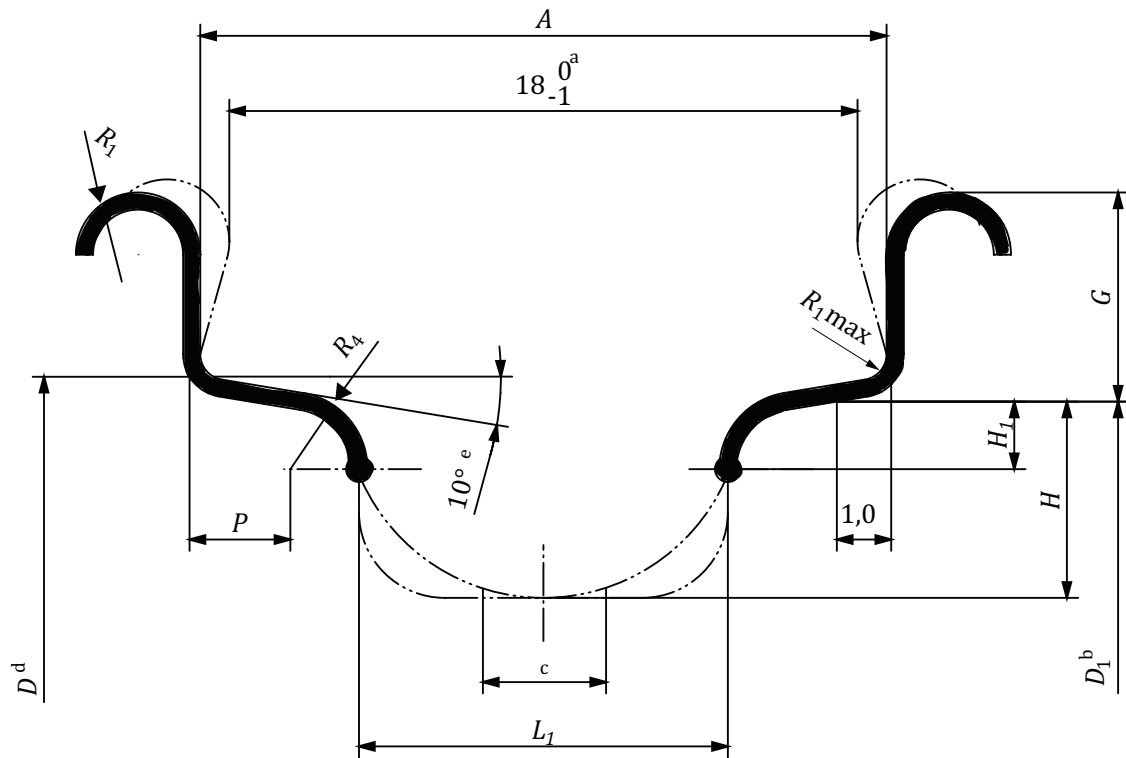
A.2 General

All measurements shall be made on rims ready for tyre mounting and placed on flat surfaces. For accurate measurements, gauges and tapes shall always be set perpendicular to the rim flanges on both bead seats.

A.3 Main rim dimensions to be measured and gauged

The main rim dimensions which are measured and gauged are indicated in [Figures A.1, A.2](#) and [A.3](#).

Dimensions in millimetres



Key

- a 18_{-1}^{0} (Rim 18 only).
- b Measuring rim diameter.
- c Valve holes $6,2^{+0,3}/_{+0}$; $8,3^{+0,3}/_{+0}$.
- d Specified rim diameter.
- e Allowed 5° to 15° (5° to 25° in case of rolled rims with nominal rim diameter 400 and smaller).

Figure A.1 — Straight side rims

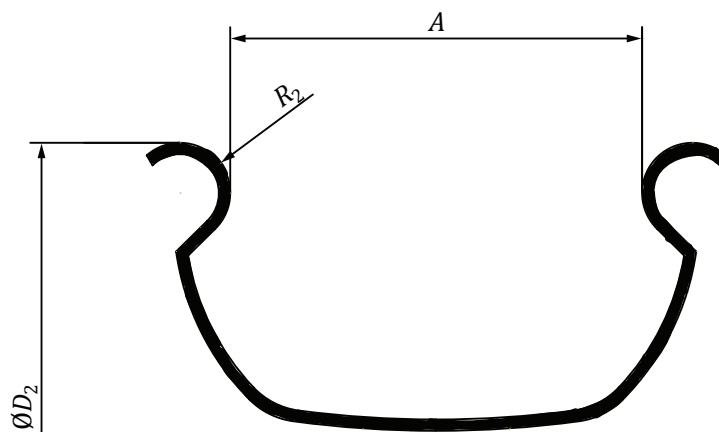
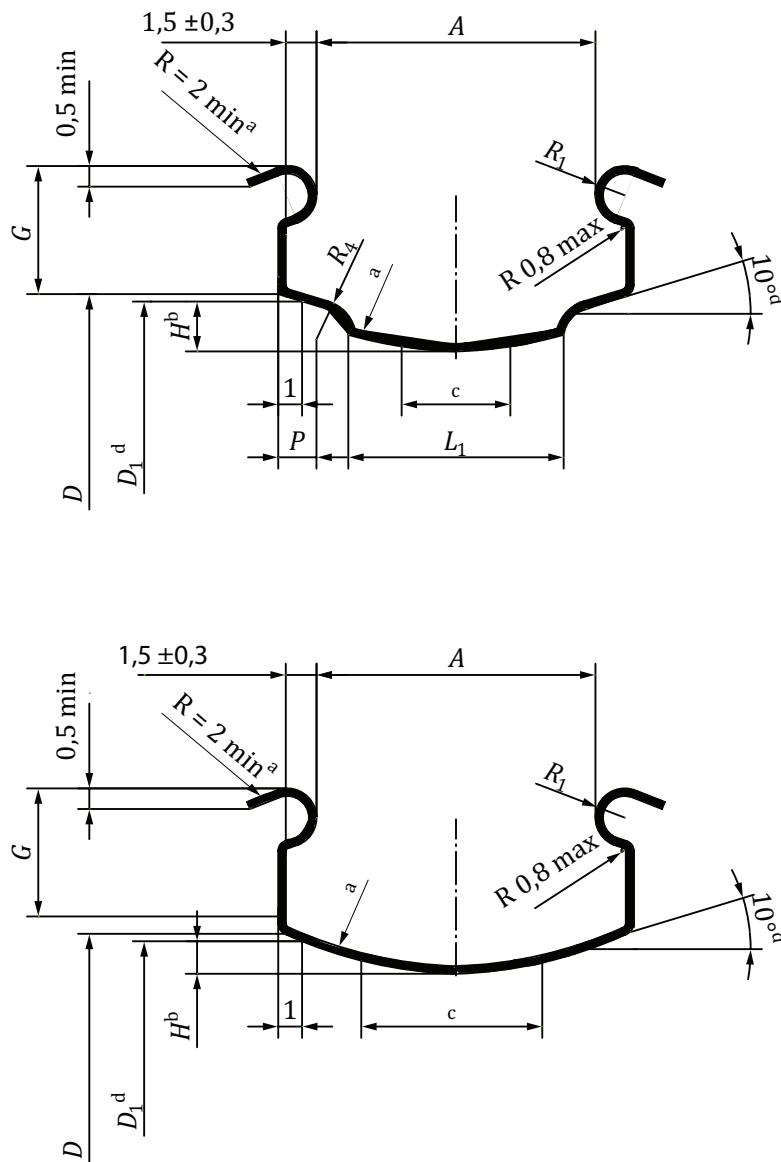


Figure A.2 — Hooked bead rims

Dimensions in millimetres



Key

- a The internal surface of the bottom well and the flange edge is to guarantee a smooth non aggressive surface in order not to damage the tyre.
- b Dimension H defines a minimum unobstructed space above the rim base and the nipple heads, with the rim tape fitted to permit satisfaction tyre fitment. Rim manufacturers shall recommend a maximum thickness for the rim tape to be used, taking into account D_1 and its tolerances. In the absence of any specification from rim manufacturers, the maximum thickness of the rim tape shall not exceed 0,8 mm in the area of the bead seat.
- c Valve holes $6,2^{+0,3}/_{+0}$. For rim codes 17C and above, valve holes $8,3^{+0,3}/_{+0}$ are permitted.
- d For reference purposes only, dimension D_1 on [Table 2](#) is to be respected.

Figure A.3 — Crotchet type rims

A.4 Methods of measuring specified diameter and bead seat circumference

A.4.1 Method 1

Here are the recommended inspection gauges, tapes and procedures for checking rim dimensions, bead seat diameter and circumference of straight-side cycle rims.

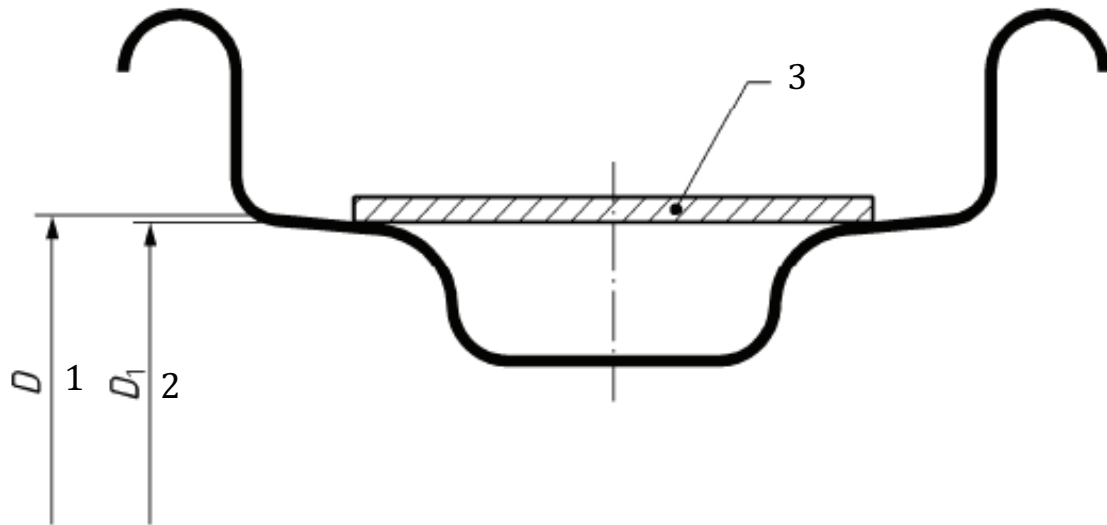
A.4.1.1 Procedure

Use a spring steel tape as illustrated in [Figure A.5](#), taking care to choose the correct tape for the rim to be measured.

Check the tape on the appropriate mandrel (see [Figure A.6](#)), and on surface plate (the tape shall be flat).

The tape is to contact the rim on both bead seats equally (see [Figure A.4](#)). It is recommended that except for experienced rim inspectors, two persons make the measurement; one holding the tape in position and applying not more than 5 kg pull on the ends, the other taking the readings.

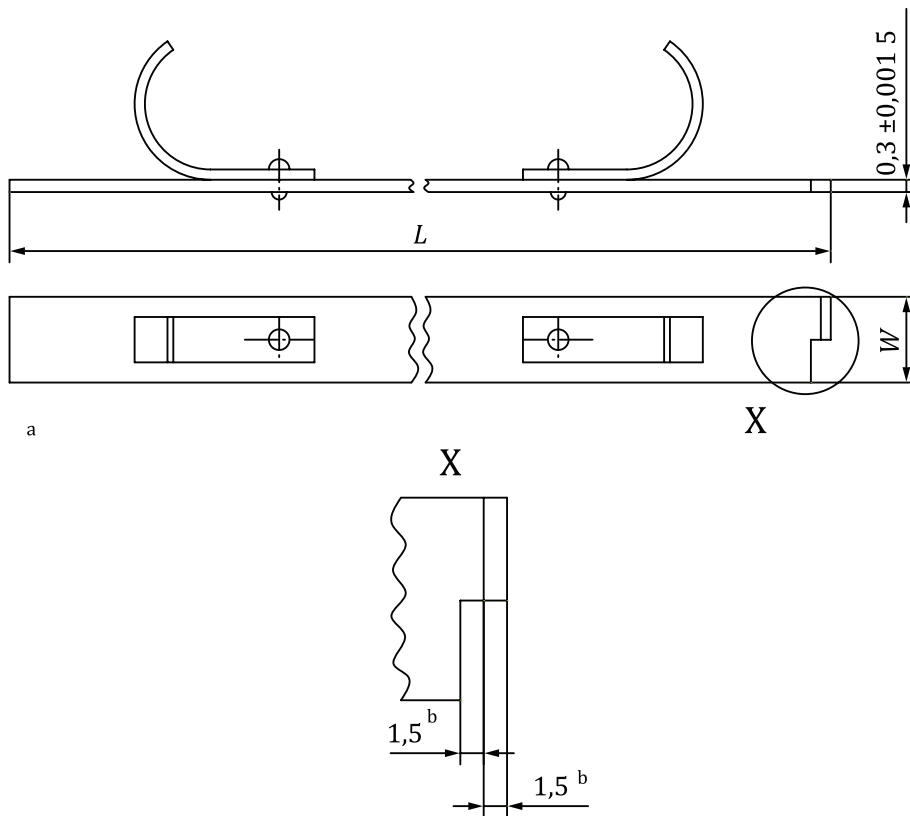
The straight end of the tape is to contact the other end within the notch.



Key

- 1 specified rim diameter
- 2 taping rim diameter
- 3 tape

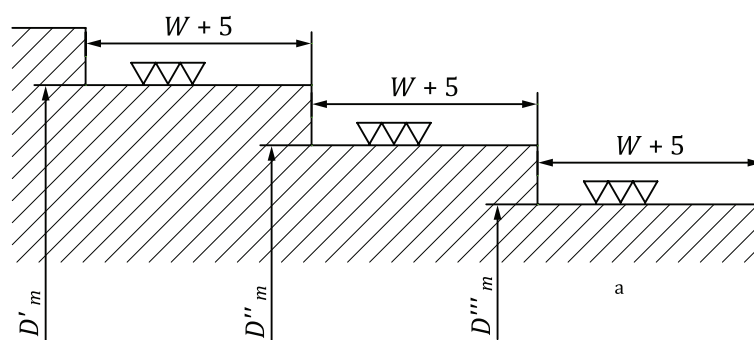
Figure A.4 — Rim diameter measurement



Key

- a Reference temperature 20 °C.
- b 1,5 for straight side rims.

Figure A.5 — Tape dimensions



Key

- a D_m see [Table 2](#).

Figure A.6 — Tape mandrel

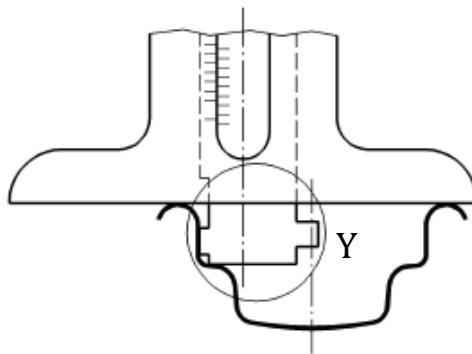
Table A.1

Rim width (mm)	Tape width $W_{-0,1}^0$ (mm)
	Straight side rims
16	14
18	16
20	18
22	20
24	22
27	25
30,5	28,5

A.4.1.2 Tape details

The tape shall be marked with Rim Width Code and Nominal Rim Diameter.

A.4.2 Method 2



Key

Y See [Figure A.8](#).

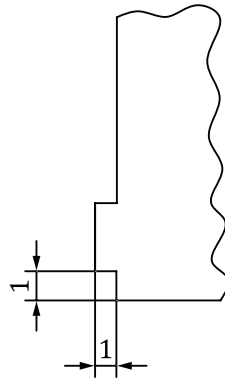
Figure A.7 — Vernier gauge

A.4.2.1 Procedure

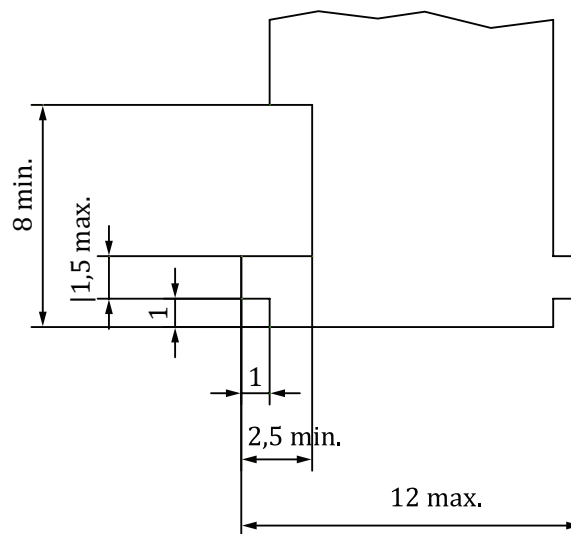
Measure the circumference of the upper part of both flanges by means of a steel inextensible tape-line (100 mm width, and 0,3 mm thickness with 0,5 mm graduation) taking care that it contacts the rim and record the two measurements, F_A and F_B .

Using an appropriate sliding gauge, as illustrated in [Figures A.6](#) and [A.7](#), measure the height of both flanges in at least four points equally spaced around the circumference taking care that the correct protrusion is used.

Compute the averages of height for the two flanges, T_A and T_B .



a) For straight side rims



b) For crotchet type rims

Figure A.8 — Detail (Y) of protrusions

Compute the measured diameters as:

$$D_A = \frac{F_A}{\pi} - 2T_A \quad (A.1)$$

$$D_B = \frac{F_B}{\pi} - 2T_B \quad (A.2)$$

Compare both diameters with D_1 values shown on [Table 2](#).

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